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THE STATUS OF HEDYOTIS PROCUMBENS VAR. HIRSUTA (RUBIACEAE)

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The species *Hedyotis procumbens* (Walt. ex Gmel.) Fosberg (*Houstonia procumbens* (Gmel.) Standley or *Houstonia rotundifolia* Michx.) is a low, creeping somewhat fleshy, heterostylous, perennial herb found along the outer coastal plain from South Carolina south throughout most of peninsular Florida and as far west as eastern Louisiana. It would be noteworthy indeed if any reasonably wide-ranging taxon were found to be completely uniform and this little herb is not in this regard exceptional. For example the leaves vary from narrowly oblanceolate or spatulate to broadly suborbicular but as far as is known differences in neither geography nor ecology are correlated with this morphological variation. Another conspicuous morphologic variable is in vestiture since individuals are either glabrous or very nearly so to so densely hirsutulous as to appear noticeably shaggy upon close inspection. This variation in pubescence has been pointed

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out in the formal descriptions of the species since at least Asa Gray's Synoptical Flora (Syn. Fl. 1 (2): 25. 1884) and has been duly noted in such standard references as Small's two major southeastern floristic works (Fl. Se. U.S. 1108. 1903 and Man. Se. Fl. 1255. 1933) and Standley's treatment (N. Am. Fl. 32: 26. 1918).

Recently Lewis (Ann. Mo. Bot. Gard. 53: 377, 378. 1966) typified this species by designating a glabrous specimen as its neotype since the original material has not been found and pubescent plants have not yet been collected in South Carolina. Thomas Walter, the South Carolina planter in whose book this species was first described, stated in the preface to his classic *Flora Caroliniana* that the specimens included came from an area within approximately fifty miles of his plantation on the Santee River. This is located in what is now Berkeley County, South Carolina. Many of the species included, however, must have been obtained during the travels "amounting in the whole to four thousand miles" of his friend, John Fraser, who took Walter's manuscript back to England and oversaw its publication in 1788. In fact, Fraser (Hist. Agrostis cornucopiae . . . p. 4. 1789) stated that his own collections had increased the number of Walter's descriptions from six hundred and forty to one thousand and sixty. There is certainly no evidence for concluding as Lewis has done that Fraser's additions to the Flora largely came from the vicinity of Charleston, South Carolina, or even specifically that *H. procumbens* was apparently collected there. Still, if authentic material of neither Walter nor Fraser is extant, it is perhaps reasonable to choose as neotype a specimen which was collected in the vicinity of Walter's home. If so, it seems a justifiable suspicion that the description in Walter's Flora was based upon the glabrate element since it is known from two counties adjacent to Berkeley County. Hirsutulous specimens have not been seen from South Carolina although they are known from two of the Georgian counties separated from South Carolina only by the Savannah River.

Lewis proposed designating those plants possessing both pubescent upper leaf surfaces and capsules as var. *hirsuta* although noting that var. *procumbens* is occasionally slightly hirsute especially [on its] leaf margins and young leaves." In evaluating the taxonomic merit of the proposed variety, one should note that four of the seventeen specimens cited by Lewis as "representative" of the hirsute variety admittedly also bore material of var. *procumbens*. This woud indicate that there is neither the geographic nor apparently the ecologic separation between the proposed varieties that would be expectd by many taxonomists for a taxon of such a rank. No other isolating mechanism has been suggested.

Specimens of this species from thirteen herbaria have been recently examined by me in an attempt to evaluate the proposed varieties. Doubtless there are more sophisticated and perhaps more convincing ways to evaluate the biological basis of two taxa than by examining hundreds of herbarium specimens. However, I believe that the evidence obtained demonstrates conclusively that the glabrous and hirsutulous plants neither represent biological populations nor are they the type of variation recognized as "varieties" by the majority of American botanists who still employ that category.

Examination of these specimens, I believe, demonstrated the following:

1) No other morphological differences were noted correlated with the variation in pubescence.

2) The majority of the specimens were clearly either glabrous or hirsutulous but a small number of specimens were very sparingly hirsutulous and these naturally prove difficult to assign to either of the proposed varieties.

3) The accompanying maps (fig. 1 and 2) present the distribution of the two pubescence types and shows them to be in large part sympatric.

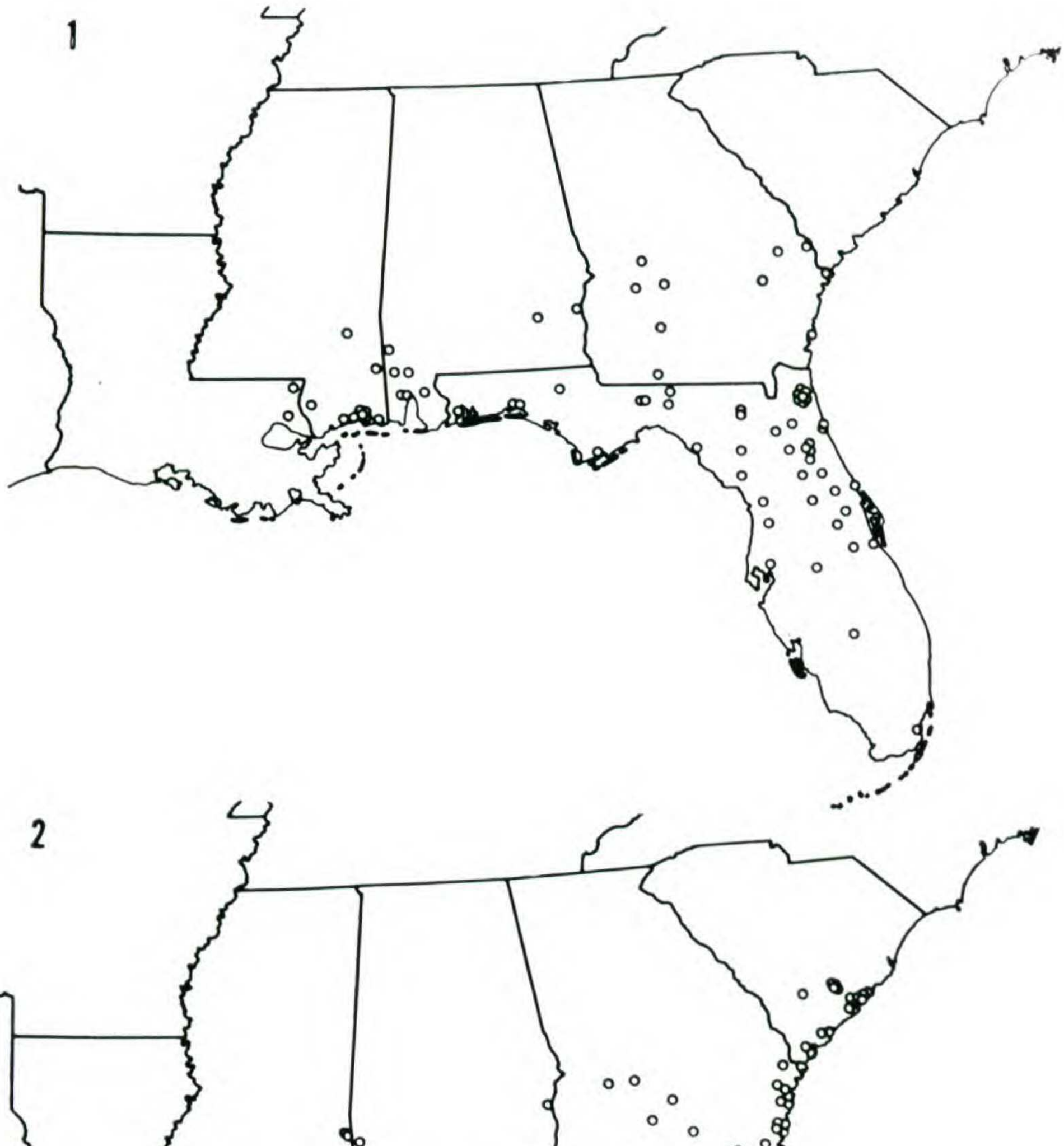
4) Habitat information on the labels does not suggest ecologic separation between the two pubescence types and,

as was suggested by Lewis' citation of mixed specimens, the two occasionally grow together in the same colony.

There is certainly nothing to indicate from the above that the proposed varieties of *H. procumbens* represent biologically significant populations. There is a greater probability that these pubescence types are variants with as little populational significance as color forms of flowers. Fortunately plants with albino flowers and the like are much less frequently described as taxa with the rank of *formae* today than they were two or three decades ago. The biological significance of such variation is certainly slight and there would seem to be no justification to encumber taxonomy with their formal descriptions and nomenclature. There is certainly not the slightest evidence that the glabrate and hirsutulous plants of this species of *Hedyotis* are members of different breeding populations. It would seem questionable whether taxonomists should continue naming minor genetical variants such as the pubescent phase of *H. procumbens*.

Even though there is a certain logical appeal to recognizing degrees of infraspecific variability by employing a hierarchy of infraspecific categories, not all taxonomists are convinced that this practice is in accord with the biological nature of species or, even if it were, could be objectively applied. Taxonomists perhaps would agree to the desirability of recognized infraspecific categories conveying some approximation of the significance of the nature of the named populations. Unfortunately this is not presently possible for to some investigators the *varietas* is the major infraspecific taxon and for others it is no more than a biologically insignificant abberation of the sort that has been designated *forma* if named at all. Consequently one must now reinvestigate each new proposal to understand the nature of the variation in order to determine how its author employs a given unit of the taxonomic hierarchy. This lack of precision and uniformity in usage is unscientific and certainly self-defeating.

Those botanists who have adopted subspecies as a substi-



Maps 1-2. Map 1. Distribution of hirsutulous specimens of *Hedyotis procumbens*. Map 2. Distribution of glabrate specimens of *Hedyotis procumbens*.

tute for variety for geographically and/or ecologically separated populations in an effort to conform their own usage to that of the zoologists might read with profit the long series of articles appearing in Systematic Zoology and other journals in the last decade or so in order to see how little unanimity actually exists within zoology as to the proper application of the category "subspecies."

Although the International Code of Botanical Nomenclature wisely refrains from arbitrarily defining the various infraspecific categories, it is most unfortunate that there is so little uniformity in usage especially now that taxonomists are set to embark jointly upon some very ambitious floristic endeavors. Perhaps half of the American taxonomists now use subspecies in the same sense that the remainder use variety *i.e* for morphologically distinctive populations occupying discrete geographic areas or different major ecological sites. Certainly further effort should be made to resolve this confusing difference in practice before major floras appear reflecting in the diverse infraspecific categories employed not so much the difference in our knowledge of the biology of the taxa but the personal bias of the contributor of a given family or genus.

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